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The improvement of hirsutism and the decrease of testosterone concentration in the peripheral blood serum after removing an endometrioid ovarian cyst

R. Słopień[1], M. Pawlak[2], A. Warenik-Szymankiewicz[1], S. Sajdak[2]

[1] Department of Gynecological Endocrinology Poznań University of Medical Sciences, Poznań
[2] Department of Gynecological Surgery Poznań University of Medical Sciences, Poznań (Poland)

Summary

The study describes the case of a patient, in which as a result of removing an endometrioid ovarian cyst, there was an improvement as regards hirsutism and the decrease of testosterone concentration in the serum of peripheral blood.

Key words: Hirsutism; Testosterone; Endometriod ovarian cyst.

Introduction

Hirsutism is caused by the activity of the excess androgens at the level of a hair follicle. The concentration of androgens in blood is a result of their production, decomposition, and the degree to which they are connected to the binding proteins in blood. The source of androgens are ovaries and adrenal glands.

Ovarian overproduction of androgens may be caused by: polycystic ovary syndrome (PCOS), androgenic ovarian tumors (Sertoli-Leydig cell tumors, hilus cell tumors, lipoid cell tumors, and granulosa-theca tumors), as well as hyperthecosis [1]. The excess level of androgens can also be connected with non-functioning ovarian tumors: epithelial tumors [2], connective tissue tumors [3], Brenner tumor [4], teratoma [5] or Krukenburg tumor [6, 7]. In this case the overproduction of androgens is not clear. Probably those tumors generate paracrine factors which stimulate androgen synthesis within the area of the ovarian stroma not affected by cancer [1].

Case Report

The patient, aged 39 consulted a doctor, because she had been suffering from hirsutism and acne for a few years. The patient menstruated regularly every 28 ± 2 days, five-day bleeding, with average painfulness. There was no history of chronic diseases, surgeries, pregnancies or medicine taken on permanent basis.

The results of physical examination: body weight 63 kg, height 165 cm, 23 points in the Ferriman-Gallwey hirsutism scale, phlegmonous acne on the back, and in the area of mons veneris. Breast exam showed stage IV according to the Tanner scale, no changes found during a palpation exam, and lactation not found. Gynecological exam: the size of clitoris within the norm, labia minora pudendis pale pink in color, size within the norm, vaginal portion of the cervix cone-shaped, located towards the sacral bone, the size and shape of the uterine body within the norm, and both ovaries without changes.

Transvaginal ultrasound (10th day of the cycle): anteflexio uteri 4.3 cm long, AP 3.5 cm, endometrium six mm homogeneous; the right ovary 3.5×3×2.8 cm in size with follicles at various stages of growth; the left ovary with a cystic lesion filled with thick liquid, 2.7×2.6×2.5 cm in size.

Hormonal tests (11th day of the cycle): anomalous: testosterone: 1.66 ng/ml (norm: 0.3−0.89); dehydroepiandrosterone sulfate: 10.82 ng/ml (norm: 0.4−9.2), other results within the norm: TSH: 1.09 mU/l; FSH: 6.9 IU/l; LHC: 8.5 IU/l; prolactin: 11.5 ng/ml; 17β-estradiol: 84 pg/ml; Ca125: 23.4 U/ml.

The patient qualified for laparoscopic surgery, during which the cystic lesion was removed from the left ovary with the coagulation of the focuses of the endometriosis. Histopathology result confirmed endometrioid cyst of the left ovary.

Check-up after six months since the surgery: the patient reports a significant improvement as regards hirsutism (Ferriman-Gallway 8 points) and acne. Ultrasound scan showed anteflexio uteri 4.5 cm long, AP 3.7 cm, endometrium eight mm homogeneous; right ovary 3.7×3.2×2.4 cm in size with follicles at various stages of growth, left ovary with a dominant follicle 17 mm in diameter, total testosterone concentration in blood serum: 0.39 ng/ml and dehydroepiandrosterone sulfate 7.5 ng/ml.

Discussion

The mechanism of overproduction of androgens in the case of non-functioning tumors is not clear. It is probable, that the excess of androgens is a result of an increased synthesis caused by the paracrine factors generated within the

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area of the tumor. [1]. These factors have not yet been identified. The case the present authors described indicates that those factors might also be generated within the endometrioid ovarian cysts.

In the described case, a decrease in the testosterone concentration as well as the improvement with regards hirsutism was found after the endometrioid ovarian cyst was removed. A following conclusion can be drawn from the case: upon the diagnosis of a focal lesion of an ovary in a patient with overproduction of androgens, first the lesion should be removed and only then, if necessary, an anti-androgen treatment should be introduced.

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Address reprint requests to:
R. SŁOPIEŃ, Ph.D.
Department of Gynecological Endocrinology
Poznań University of Medical Sciences
Ul. Polna, 33
60-535 Poznań (Poland)
e-mail: asrs@wp.pl